

service to customers and offer new services that would increase value to customers in California (e.g., regional Centrex and information services for calls originating in other LATAs). Also, relief from the interLATA restriction would reduce Pacific's cost of provisioning network access because it now must build a full set of access facilities in each LATA (e.g., signal transfer points) in order to provide customers access to interexchange carriers. Absent the interLATA restrictions, Pacific could optimize its access network services over multiple LATAs by eliminating inefficient duplication. The addition of a strong competitor like Pacific may also sharpen price competition in the interLATA toll market. For these reasons, I recommend that the Commission delay implementation of intraLATA presubscription until Pacific Bell has been granted interLATA relief. If state regulatory policies toward Pacific and its competitors are not logically consistent and temporally coordinated with corresponding Federal policies, Pacific, its customers and the State's economy could suffer considerable economic harm.

***2. The Commission should not impose excessive unbundling and resale requirements on Pacific Bell***

To understand the effects of local competition policies on Pacific Bell, it is necessary to understand the difference between interconnection and unbundling, especially because the two concepts — though fundamentally different — are often confused and misused. It is often argued that the local exchange carrier has a "bottleneck" (or "monopoly bottleneck"). This term, though, has been used to describe two very different economic characteristics of communications networks, one of which is correct; the other of which is not. In the first instance, it refers to the local access "bottleneck," which conveys the fact that all calls to a customer served by a local exchange carrier (including a competitive provider) must pass through the facilities of that carrier or provider.<sup>112</sup> This is a correct characterization and use of the term bottleneck, independent of the number of local service

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<sup>112</sup> With the rapid growth of wireless communications services, this is no longer literally true. If the price of wireless service continues to fall, it may become commonplace for end users to have two forms of access, one wireline, one wireless. In that case, according to this usage, there would be two "bottlenecks."

providers, as I will show subsequently. The use of the "bottleneck" term has also referred to the local loop, the physical means by which access is provided. In that usage, it has been implied that the local loops of the incumbent exchange carrier are an "essential facility," because it is not economic for competing carriers to build their own loops or purchase them outright from alternative suppliers. As we shall see, this latter use of the term bottleneck is incorrect.

Consider the use of the term "bottleneck" with reference to local access. Suppose there are two carriers, red and blue, serving an area, both of which have extensive networks, with local loops that reach every customer's premise. Imagine that John, served by the red carrier, and Sally, served by the blue carrier, want to be able to call each other.<sup>113</sup> In that situation, the red carrier has a bottleneck to John, and the blue carrier has a bottleneck to Sally. Note that the bottlenecks exist even though the red network extends to Sally and the blue network extends to John, so long as John and Sally subscribe to only one of the carriers, red or blue. Thus, the bottleneck exists even when two competitors' networks reach every customer's premise. Clearly, the "bottleneck" in local exchange services results not from there being a monopoly supplier of local exchange services in the area but from the fact that each customer is served at any given time by only one carrier. Hence, it is not the local loop that is the source of the bottleneck, but the need for access to the customer that is provided over the loop.

"Interconnection" is the ability of any carrier to deliver calls originating from its customers to customers served by other carriers. Because of the access bottleneck, John and Sally would have to subscribe to the same carrier for local exchange service to be able to call each other. In the " $n$ -tuple" case of many customers, each customer would have to subscribe to both the blue and red carriers to be assured of having access to all other customers in the area. The same access bottleneck applies without limit: if there are  $m$  carriers in an area, each with networks extending to all  $n$  customers in the

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<sup>113</sup> Though this discussion relates to terminating access, originating access is also essential for other carriers (e.g., the ability of customers to reach various long distance carriers).

area, each customer would have to simultaneously subscribe to all  $m$  carriers to be able to access all other  $n-1$  customers. In recognition of this "bottleneck" problem, the Commission has directed and Pacific has offered to interconnect with interexchange carriers (IXCs), cellular carriers and CLCs. Because the bottleneck exists no matter which carrier provides access, though, it is imperative that LECs and CLCs have reciprocal interconnection requirements, i.e., all exchange carriers or local service providers must practice open access and non-discriminatory interconnection.

"Unbundling" refers to a requirement that a carrier offer for sale (or use) a network facility or function that the carrier would not otherwise offer. Prospective entrants into local exchange services markets have argued for "unbundling" of the local exchange carrier's facilities. As will be explained below, the only valid public policy basis for unbundling is that the unbundled service in question is an essential facility. As often as not, though, proponents of unbundling in the U.S. have argued that, because there is a bottleneck in local access, LECs should be required to unbundle. This is a non sequitur. Local access is a bottleneck, for the reasons just explained. That does not necessarily mean, though, that the facilities of the local exchange carrier are "essential." When a facility is essential but is only offered for sale in combination with other facilities, there is a valid economic rationale for requiring the incumbent supplier to unbundle and separately price these facilities.

In antitrust policy, the essential facilities doctrine requires that the owner of a facility provide access to that facility if it is deemed "essential" for competition in a particular market. The essential facilities doctrine originated in 1912 in the Terminal Railroad case in St. Louis.<sup>114</sup> As commonly employed by the courts, the essential facilities standard has three key elements. First, the facility must be and remain unique (i.e., not economically replaceable by competitors either through construction of their own facility or through third party suppliers). Second, it must be centrally located in the vertical production process (i.e., it is a necessary input for competitors to compete in a relevant output market). Third, denial of access to the input would demonstrably impede competition

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<sup>114</sup> United States v. Terminal R.R. Ass'n, 224 U.S. 383 (1912).

in the specified output market.<sup>115</sup> Based on this definition there is only one element of local exchange service which is unquestionably an essential facility — the ability to terminate calls on a competitor's network.<sup>116</sup>

A facility should only be considered essential in relation to a specific market — not in relation to an individual customer.<sup>117</sup> It may well be that given current technology it is uneconomic for a new entrant to build distribution plant to serve all customers in a local exchange market.<sup>118</sup> However, it is not necessary or necessarily economically rational to serve every customer in the market in order to compete in the local exchange market. For example, many railroad customers are served by a single rail carrier, but that does not make that branch line an "essential facility," because it is quite possible to compete in the rail freight services market without serving every customer.<sup>119</sup> As CAPs have shown in the long distance access market, new entrants can successfully penetrate markets by entering the most desirable core urban segments, serving a few high volume customers and expanding outwards. This also holds true for other new entrants in the local exchange markets.

It is important to point out that there is a critical difference between the local loop and the facilities which courts have found to be essential: railroad bridges,<sup>120</sup> news wire services,<sup>121</sup> multi-

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<sup>115</sup> See David Gerber, *Virginia Law Review*, (1988) Volume 74, p. 1073 for a similar definition.

<sup>116</sup> In the U.S. state regulators have asserted that certain elements of local exchange facilities are essential and should therefore be unbundled: telephone numbers; listings of customers' telephone numbers; emergency services calling capability (911); and access to rights-of-way among others.

<sup>117</sup> It is critical to distinguish between an essential service and an essential facility. A service such as an ambulance transportation, policing, or air traffic control services can be "essential" for an individual customer. An essential facility is defined in relation to a geographic market.

<sup>118</sup> As experience in the UK has shown with cable-telephony, it is economically feasible to provide a second wireline access channel to residential customers. See "Contest for Your Conversation," *Financial Times*, Monday October 3, 1994.

<sup>119</sup> For this reason, rail branch lines are not considered essential facilities. As common carriers, railroads are required to terminate traffic from other carriers to customers located on their branch lines; railroads are not required to rent or lease their branch lines to another carrier so it can serve the customers on that line instead of the owning carrier.

<sup>120</sup> *United States v. Terminal R.R. Ass'n*, 224 U.S. 383 (1912).

<sup>121</sup> *Associated Press v. United States* 326 U.S. 1 (1945).

resort ski lift tickets,<sup>122</sup> electric power wheeling,<sup>123</sup> utility rights of way,<sup>124</sup> and the interconnection of telecommunications common carriers.<sup>125</sup> All of these other facilities can be shared by multiple users. The local loop, in contrast, cannot be shared by two or more carriers, i.e., it cannot be simultaneously connected to the central office switches of two different local exchange carriers. Requiring Pacific to unbundle the local loop and to rent it to a competing carrier denies Pacific use of the local loop because the renting carrier provides the switching. In terms of essential facility cases, such a denial of access to the facility owner is unprecedented: it would be the equivalent of preventing the Washington Redskins from playing in the stadium they own because a competitor wanted to use the stadium at the same time.<sup>126</sup> This scenario is very different from requiring that excluded firms be allowed to participate in a multi-firm joint venture or even from requiring a utility to rent a competitor space on its poles. None of the previous essential facility cases require the facility's owner to provide exclusive or even preferential use of a facility to a downstream competitor. Note that terminating access is a shared use of the local loop — i.e., the owning carrier can terminate calls from its customers over its own loops, as well as calls from the customers of competing carriers. Granting terminating access to other carriers does not deprive the owning carrier from the use of its facility and is therefore analogous to other applications of the essential facilities doctrine by the courts.

Even if a facility is demonstrated by a competitor to be essential and the competitor is granted access to, or shared use of, that facility, the owner of the facility is constitutionally entitled to reasonable compensation.<sup>127</sup> By protecting private property owners against unjust taking, the state provides incentives for investment in public utilities. So far as I know, no court has found that

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<sup>122</sup> *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985).

<sup>123</sup> *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973).

<sup>124</sup> *FCC v. Florida Power Corp.*, 480 U.S. 245 (1987).

<sup>125</sup> *MCI Communications Co. v. AT&T*, 708 F.2d 1081 (7th Cir.), cert. denied, 464 U.S. 891 (1983).

<sup>126</sup> *Hecht v. Pro-Football, Inc.*, 570 F.2d 982 (D.C. Cir. 1977), cert. denied, 436 U.S. 956 (1978).

<sup>127</sup> See the testimony of Professor Daniel Spulber in this proceeding for an explanation of this Constitutional principle and its economic rationale.

competitors should pay only the incremental cost of their use of the facility, with good reason: as a matter of economic policy, it would deprive the facility owner of reasonable compensation for the use of the facility. If the owner's end user customers pay prices that include a contribution to common costs, then so too should competitors who are granted access to the facility.

Hence, there is neither legal precedent nor a valid economic policy rationale for imposing burdensome unbundling requirements on Pacific mandating that the entire network be unbundled. If a CLC believes that a specific network element constitutes an essential facility, then it should present economic evidence, based on sound network technical information, explaining why each of the network elements in question is, in fact, an "essential facility." Such evidence should show that (a) it is technically feasible to unbundle that specific element; (b) that such unbundling would not jeopardize network reliability or the security of private communications; (c) that the cost of unbundling that element is not excessive, relative to the economic value of the unbundled element; (d) that there is a *bona fide* demand for the unbundled element from competitors; and (e) most importantly, that without the unbundled element, CLCs could not compete with the LEC, i.e., it is an essential facility. Otherwise, there is no public policy basis for mandatory unbundling, and a great deal of potential harm from doing so.

Thus, the essential facilities doctrine is the only valid legal and economic basis for mandating Pacific to unbundle any specific network component. That does not mean that Pacific might not choose to unbundle loops on a voluntary basis. So long as it receives adequate compensation for that product, Pacific may be willing to voluntarily offer unbundled loops, even if they are not essential facilities. If Pacific is compelled to unbundle its network even though the network elements are not essential facilities, Pacific would be placed at a substantial competitive disadvantage *vis-à-vis* CLCs which are not required to unbundle their networks. The competitive harm to Pacific would be greatly exacerbated were it required to price those unbundled elements at uneconomic levels.

For identical reasons, mandatory resale of LEC services should be required if and only if the service is an essential facility. In deciding the resale issue, the Commission should recognize that excessive resale provisions — especially at subsidized wholesale prices — discourages development of facilities-based competition. Excessive resale requirements also discourage innovation and new service offerings by LECs: if a LEC offers a new service that is attractive to customers, and the CLC knows it can buy and resell it, that reduces the LEC's incentive to offer the new service because it can not gain a competitive advantage over its rivals. If resale is required, the wholesale price should cover economic costs, including a reasonable contribution to common and embedded costs, so that Pacific is not forced to subsidize competitors. Pacific's recently filed resale proposal represents an economically sound approach to resale: it enables CLCs to package local exchange services with other services, but allows Pacific to recover its costs. Cost-based resale also maintains a reasonable competitive balance between Pacific Bell and CLCs.

**3. *The Commission should authorize interconnection prices that contribute to the recovery of Pacific Bell's common and embedded costs***

There are four major policy objectives that relate to regulatory pricing decisions: allocative efficiency, technical efficiency, dynamic efficiency and distributional equity. The three efficiency objectives are often mutually compatible, (i.e., a pricing structure that promotes allocative efficiency will also usually promote technical and dynamic efficiency). There is sometimes a conflict, however, between the efficiency objectives and the equity objective in pricing policy. Although there is a strong public sentiment that prices reflecting economic costs are "equitable," there is also a recognition that departures from that principle are warranted in some cases. In those cases, there exists a tradeoff among efficiency and equity. The role of the regulatory agency is to assess the information and arguments presented by contending parties, evaluate the tradeoffs among competing objectives, and reach a balance among these objectives.

Technical, or "first-order" economic efficiency refers to making the best use of inputs in the production of outputs. The objective of technical efficiency is the production of any given level of

output with the minimal use of inputs, in order to preserve scarce resources. Technical efficiency is maximized when companies and their employees minimize costs while maintaining or improving quality. When prices are based on economic cost and reflect market demand, consumers will turn to the seller with the lowest price — hence the producer with the lowest cost. Policies that induce uneconomic entry into local exchange services reduce technical efficiency, because services are not then provided by the most efficient supplier. Customers who purchase from the alternative supplier are worse off because they pay prices exceeding the incumbent's cost of service. Other customers are worse off because they lose the contribution those customers could have made to the common costs of the incumbent. Competition greatly exacerbates the harm from policies that reduce technical efficiency. If the prices of interconnection services are not economically rational, competitors will "arbitrage" prices and selectively choose to buy services that are under-priced (even when it would be less costly to self-supply the services).

Allocative or "second-order" economic efficiency refers to the best use of outputs. Prices play a critical role in achieving allocative efficiency because they are the signals of the cost and value of goods and services. Allocative efficiency means that outputs are sold at prices that reflect the true economic costs of producing the output, including a share of the common costs of a multi-product firm. If price is greater than cost, consumers will purchase less than the optimal quantity. If price is less than cost, consumers will purchase more. In either case, there is a loss of "social welfare" due to the misallocation of resources. The amount of welfare loss in any given situation depends on two factors: the difference between price and cost; and the sensitivity of demand to price (i.e., the price elasticity of demand). Hence, policies that prevent prices from reflecting economic costs and demand conditions are directly contrary to allocative efficiency.

Moreover, with emerging competition, buyers can turn to alternative sellers (often unregulated), so that the quantity purchased becomes much more sensitive to prices. Consequently, the more competition in the market, the greater the social costs of inefficient prices. For example, policies that require Pacific to price average when its competitors can selectively target low cost



customers are directly contrary to allocative efficiency. The prices of services sold to competitors are especially critical to achieving allocative efficiency. If, for example, the price of unbundled loops (or the price of local service for resale) does not reflect its economic costs, competitors will lease too many loops (or too much local service) from Pacific and build too few of their own. In addition, the prices charged by competitors who use Pacific's loops or resold local service to provide local exchange service will not reflect the actual economic costs of their services.

Dynamic efficiency refers to maintaining an optimal rate of technological change, including the rate of innovation and the rate of adoption of innovations. One of the chief benefits of an enterprise economy is that competition stimulates the development and adoption of new technologies, (i.e., methods of production which reduce the quantity of inputs needed to produce a given level of outputs). While technical efficiency is a static concept (i.e., it assumes that technology is fixed), technological progress is a dynamic measure of efficiency. Interconnection pricing can influence the rate of technological progress in two different ways: (1) if prices are set too low, competitors may not adopt better, lower cost technology for providing the service in question; and (2) if prices are set too high, competitors may adopt inferior technology, even though the cost of providing service is higher than the existing technology. For example, if high cost loops are not price deaveraged, competitors would be discouraged from developing and adopting lower cost "wireless" technologies.

As a telecommunications policy objective, the twin goals of distributional equity are that prices should take account of customers' ability-to-pay and rates of return to investors should fairly compensate them for the use and risk of their capital. In telephone rate regulation, these equity goals have been achieved by regulating the rates for local exchange telephone services at a level that nearly everyone can afford and by rate of return regulation to ensure an adequate return to investors. In the context of emerging competition, these equity objectives can be achieved by (1) setting prices so that customers cover the costs they cause, including contribution to common costs, unless distributional equity requires targeted subsidies to low income households and/or customers in extremely high cost areas; (2) setting the prices of interconnection services to competitors to cover incremental costs and a

reasonable contribution to common costs (i.e., there is NO policy rationale for requiring that Pacific subsidize its competitors); and (3) allowing Pacific to recover the embedded costs it has incurred and/or will incur in meeting its franchise, universal service and carrier of last resort obligations, at least in part from the customers of CLCs (i.e., through interconnection prices).

Developing, proposing, evaluating and approving interconnection prices on the basis of economic pricing principles is the best way to achieve these public policy objectives in the pricing of interconnection services. Pricing principles refer to the standards or criteria which should be used in setting or evaluating the prices of goods or services. In a market economy, we depend critically on prices in the allocation and distribution of goods and services. Prices play two critical roles: compensation and rationing. By charging prices, the sellers of goods and services are compensated for their costs of productions. By signaling potential buyers, prices act to ration goods and services among competing users and uses. In unregulated markets we allow the interaction of buyers and sellers to determine prices. We assume that competition among sellers and among buyers will generate prices that fairly compensate the sellers, while promoting the efficient use of scarce resources. In regulated markets, we set prices (or limit the range of prices) by administrative action; in order for prices to serve these intended economic functions, however, they should be consistent, and explicitly recognize the tradeoffs among public policy objectives. There are two economic pricing principles of fundamental importance: prices should be cost-based; and prices should reflect differences in market conditions.

The principle of cost-based pricing means the price for each service should be based on the cost of providing that service. Long-run incremental cost (LRIC) should be used as a cost floor to protect against cross-subsidies to competitive services. When there are several elements of a given service whose costs vary independently, those elements should be priced separately (e.g., pricing separately for transport and switching in access charges). Traditionally, service costs have been calculated on a statewide basis, when in fact there are significant differences in the cost of providing any given service, depending on population density, traffic density, rates of growth, and other factors.

For both efficiency and equity reasons, prices ought to differ when there are significant differences in costs among users of a service. Cost-based pricing should also recover common costs. In the case of Pacific, the sum of the LRICs of its services are sub-additive due to scale or scope economies, because there are substantial common and embedded costs that are not included within the LRIC of any individual service. Hence, cost-based pricing does NOT mean prices equal to costs, because prices should, in most cases, include a markup above the incremental cost. Most prices should, that is, include a contribution to common cost (and in the case of a rate of return regulated firm, to embedded costs as well).

The markup pricing principle implies that prices should take account of the conditions of demand for a particular service (i.e., rates should be market-based as well as cost-based). The principle implies that, as demand conditions change over time, due to competition, technological innovation or changing customer preferences, the markups of prices over costs should also change. Markup pricing is widely practiced in competitive markets because all firms must price to recover their common and embedded costs, which they do by marking up prices above LRIC. If firms did not price some of their services above incremental costs, they would not cover their common costs (including capital recovery and cost of capital). Hence, in industries with common costs, competition does NOT drive prices to LRIC.

The markup pricing principle applies to interconnection prices as well as the prices of end-user services. If interconnection prices did not include a contribution toward common and embedded costs, that would mean that 100% of Pacific's common and embedded costs would be borne by its customers, while the customers of interconnecting carriers would make no contribution to the recovery of common and embedded costs — even though those customers benefit substantially from Pacific's investment in a ubiquitous public switched network. At the same time, as competition develops, there will be strict limits as to how much of its embedded costs Pacific can recover in interconnection prices. As competition for access and exchange service increases, the marketplace will dictate lower markups and less contribution from interconnection prices.

The Commission should also reduce opportunities for rate arbitrage by CLCs.<sup>128</sup> Those CLCs who are both a facilities-based provider and reseller, should be prevented from avoiding Pacific's switched access charges by arbitraging the differences between the wholesale and retail prices of services. These tariffs were adopted in a very different environment, one in which competition was limited by the Commission's policies. In that environment, Pacific was obligated to price its services and make network investments to achieve the State's public policy objectives. Pacific has been, in effect, an instrument of public policy in California. Over time, that will change. Once full competition has developed, the State may no longer rely on a single company to ensure the availability and affordability of basic telephone service. Until then, though, it is critically important that the Commission move cautiously and carefully to implement policies that do not put Pacific at a competitive disadvantage, thereby depriving its shareholders from the opportunity to recover their capital investment. The Commission's interim rule for "Bill and Keep" does put Pacific at a competitive disadvantage and undermines Pacific's opportunity to earn a fair return because it will not compensate Pacific Bell for the costs of terminating calls from CLC customers to Pacific's customers.

***4. The Commission should allow Pacific Bell to deaverage and flexibly price its services to meet competition and changing market conditions***

Depending on the level of funding approved by the Commission and obtained through the universal service fund, it may also be necessary to deaverage local exchange rates as competition develops because, as mentioned earlier, the demand for telecommunications services is very highly concentrated, and entrants with geographically limited networks can reach customers representing a very substantial share of local and toll revenues. A rational competitor does not need to serve all geographic or customer segments to compete effectively in one or a few segments. Instead, the

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<sup>128</sup> The Commission should be aware that self-suppliers of telecommunications services may seek certification as competitive local exchange carriers in order to engage in regulatory arbitrage. For example, many heavy users of telecommunications services may seek certification as competitive exchange providers in order to receive fees for terminating calls they receive. They could avoid paying Pacific Bell terminating access charges by using regular Pacific Bell access lines for outgoing calls. Alternatively, depending on the relative price of local business usage compared to terminating access, a customer might become a CLC to arbitrage that rate differential.

rational entrant will target its entry, at least initially, at the small share of the customers who account for a large share of revenues. Whereas the CAPs have targeted customers in high density areas, cable companies and wireless carriers will presumably target high usage customers, wherever they may live.

The Commission should also recognize that the obligation to provide facilities to serve all customers will place Pacific at a cost disadvantage versus a provider that rents loops from Pacific Bell to fulfill its obligation to provide service throughout its service area. The actual cost of an unbundled loop is a function of the loop length, though Pacific may be required to rent these loops at an average price. A rational entrant will supply its own loops where the cost of providing loops is low and will lease loops from the LEC where the cost of loops is high. Unbundling the local exchange network, with interconnection rights for new entrants, would, therefore, increase Pacific's vulnerability to entry enormously. An entrant would not need to build up a parallel network to compete extensively with Pacific. By interconnecting their "intensive" network facilities with loops leased from Pacific's, entrants could suddenly serve an even greater share of the most profitable customers. This would cause a substantial loss of competitive opportunity and revenues for Pacific Bell, making it difficult to earn a reasonable return on its investment. Hence, it is imperative that the Commission allow geographic price deaveraging in order to remove a serious competitive handicap on Pacific Bell.

## **E. Recommendations for Local Competition Policies**

### ***1. Principles for local exchange competition and telecommunications policy***

Many current regulatory policies are still premised on the outdated assumption that Pacific has and will continue to have monopoly power in providing network access and exchange services, which justifies asymmetric regulations to offset this supposed competitive imbalance. At the same time, the state has an interest in facilitating entry and competition in local exchange services while maintaining the technical integrity of the public switched telephone network and the affordability of basic telephone services. To ensure the full benefits of healthy, balanced competition, regulatory and

**Ensure Interconnection and Interoperability:** Under appropriate terms and conditions, entrants should be granted expanded interconnection to improve efficiency and interoperability and a "network of networks." Such interconnection rights and obligations should be mutual and reciprocal among carriers. Pacific should be treated fairly, because it will continue to serve as the ubiquitous network for small business and residential users and as the "network of networks," providing interconnection and interoperability across competitors.

**Promote Balanced Competition:** When technically feasible, and when balanced by appropriate changes in other regulations, public policy should reduce or remove barriers to entry, enable competition to develop more quickly and ensure that all customers enjoy the benefits of competition. Balanced competition expands customer choice and provides incentive for innovation, investment and greater responsiveness to customer wants and needs. This principle dictates that the Commission time the implementation of intraLATA presubscription to the removal of the MFJ restriction, so that Pacific Bell can compete on even terms with IXC's and other full service providers.

**Promote Competitive Neutrality:** Regulatory policy should promote the right kind of competition, that which responds to real market demands and reflects real economic efficiencies. Regulators should avoid policies that stimulate artificial competition wherein entrants exploit regulatory distortions and arbitrage uneconomic pricing schemes. That means that regulatory policies should be competitively neutral. Policies that treat competitors differently can artificially bias customers' choices and distort entry and investment decisions. Policies should provide competitors with a fair opportunity to compete, but not attempt to guarantee their success. This principle means that the Commission should not require Pacific to sell unbundled loops or local exchange service for resale at prices that do not cover costs, including a reasonable contribution to the recovery of Pacific's common and embedded costs.

**Regulatory Symmetry:** Regulatory asymmetries that give new entrants a competitive advantage by creating incentives for targeting the most profitable customers, arbitraging rate

structures, exploiting cross-subsidies and avoiding social policy obligations are contrary to efficient competition. To achieve efficient competition, regulations should allow Pacific and other competitors to compete with their rivals on the merits, by allowing pricing flexibility, by encouraging new services and innovation, and by allowing the market to reward success and punish failure.

**Recognize Fundamental Differences Among Competitors:** There are fundamental differences between Pacific and CLCs: policies should treat each type of carrier according to its obligations. Current regulations require Pacific to provide explicit and implicit support of universal and ubiquitous service. To achieve universal service, Pacific is required to price its basic local exchange service below economic cost, thereby requiring a cross-subsidy from other services. To achieve ubiquitous service, Pacific has been required to serve all customers at prevailing prices, whether it made good business sense or not. CLCs will presumably not be required to provide either universal or ubiquitous service, even though they will benefit tremendously from Pacific doing so. Interconnection rules and prices must incorporate this fundamental difference. But entry is not the only hallmark of a competitive market — so too is exit. If, as a matter of public policy, local exchange carriers will not be allowed to abandon basic services, then regulations of LECs and CLCs should reflect this fundamental difference in their service obligations. Similarly, in the event that a CLC were to close down its business or fail financially, LECs might be required to be in a position to assume responsibility for assuming service to those customers. The rules of and prices for interconnection must reflect these fundamental differences between LECs and CLCs, until such time as both types of carriers have equivalent duties and rights.

**Move Toward Economically Rational Pricing:** Public policies should attempt to be responsive to current and expected market conditions in the industry being regulated and in related industries. Prices, as signals of cost and value, play a critical role in market exchange. Therefore, regulators should allow prices to be set by market forces whenever possible, or, alternatively, emulate market forces when they do set prices (or pricing parameters). Regulators should reduce incentives

for uneconomic entry and investment by allowing Pacific the flexibility to price down to incremental cost.

**Synchronize Regulatory and Competition Policies:** Regulatory and competition policy should be synchronized. As technological forces and competition policies further open markets to competitive entry, regulatory policies should be reformed to ensure that they are consistent with actual and expected conditions in the marketplace. For competition policy to work well, pricing should be market driven with only limited, targeted exceptions. Competition policies should recognize when, and the degree to which, prices are not market-driven. In the best case, prices are regulated only when competition or customer discretion is inadequate to protect buyers from the exercise of market power.

**Adopt Flexible, Adaptive Policies:** Rapid changes and growing differences in telecommunications markets and technology require policies that are adaptive and flexible. An adaptive policy framework enables change to occur more or less automatically as market conditions change, e.g., classifications of carriers should be seen as temporary and transitional: competition will make regulatory distinctions unsustainable over the long term. A flexible regulatory framework encourages enterprises to respond quickly to different customer needs and competitive conditions by offering different prices and trying product offerings. Without regulatory reforms that will allow Pacific to adapt to changing market conditions, Pacific will not be able to compete with competitors not similarly constrained. Hence, the Commission would effectively deny Pacific a reasonable opportunity to earn a fair return on those investments.

## ***2. Lessons from history: the case of surface freight transportation***

There are significant parallels between the policy changes in transportation fifteen years ago and the recent and pending policy changes in telecommunications now. In both cases, after several decades of stable regulatory policies that relied heavily on administrative controls, the nation opted to pursue a different course: the development and implementation of regulatory policies that promote



competition and speed the transition from a heavily regulated environment to a less regulated competitive environment.

The record of the success of surface freight transportation under reformed regulatory policies came, unfortunately, much too late. Indeed, it was the drastic failures of asymmetric, non-adaptive regulatory policies which generated the force for finally changing policies in the late 1970s and early 1980s. By the 1970s, the US railroad industry was in financial and physical ruin. Approximately one-fourth of the rail mileage was owned by carriers in bankruptcy.<sup>129</sup> In addition to billions of dollars in Federal subsidies to protect essential rail services and bail out bankrupt carriers, there was an enormous negative effect on workers, communities and investors, due to the long-term decline of rail service. The impact on the regional economies of the Northeast and the Midwest was especially devastating.

While many observers cited the "natural decline" of railroads as a competitively viable industry, unable to compete with motor carriers, water carriers and pipelines, the current health of the rail freight industry belies that explanation. The decline was caused by obsolete regulatory policies, thanks in no small part to the major competitors of railroads, the trucking industry.<sup>130</sup> In one proceeding after another, motor carriers argued strenuously that railroads should be prevented from responding to truck competitors, because that would harm competitors. Truckers argued that rail carriers should price at or above "fully distributed costs," even though the railroads' incremental costs on traffic they were losing to trucks was far lower.<sup>131</sup>

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<sup>129</sup> From 1971-1980, railroad return on equity averaged less than 3%. Since the Staggers Act, not one major railroad has gone bankrupt and the financial condition of the industry has improved dramatically. See Mitchell E. MacDonald, "Rails Climb Back into the Ring," *TRAFFIC MANAGEMENT*, December 1993, pp. 40-41.

<sup>130</sup> The ICC's decisions were compounded by differential legislative treatment, which exempted private motor carriage, contract motor carriage, and agricultural commodities from Federal regulation. With the artificial competitive advantage gained from rail rates set by the ICC to cover fully distributed costs, motor carriers took huge amounts of traffic from rail carriers even though their economic costs were higher. See Keeler, pp. 28-29

<sup>131</sup> Keeler, T.D., Railroads, Freight, and Public Policy Brookings, Washington, D.C., 1983, pp. 28-29 discusses this policy. Evidence that rail costs are substantially lower than truck costs for many commodities is provided by Keeler (same cite) p. 76. Moreover, using short-run variable costs will provide even lower estimates of rail costs.

The Interstate Commerce Commission was, frankly, blinded by an anachronistic view of the railroads as "monopolies," eager and able to destroy their highway competitors unless regulators stood vigilant by preventing rail carriers from pricing their services economically and by inhibiting the development of new rail services. In reality, the trucking companies rapidly stole the most profitable, high valued traffic, leaving the railroads to serve unprofitable customers and low density rural areas. Regulators failed to allow railroads pricing flexibility in response to growing competition from motor carriers, yet forced railroads to continue subsidies to agricultural shippers and rural areas with no source of subsidies.<sup>132</sup>

After a decade or more of physical decline and financial strife, the Congress and the Interstate Commerce Commission finally responded to the changed economic conditions and competitive realities. Those regulatory reforms have revitalized the rail industry, brought down rail rates in real terms,<sup>133</sup> restored the industry's financial health, induced substantial investment in network upgrades, stimulated rapid technological innovation and deployment, and shifted large volumes of truck traffic off the highways and on to far more efficient intermodal trains.<sup>134</sup> Shipper surveys reveal that most

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The formula designed by the Interstate Commerce Commission produces cost variability in the 50 to 60 percent range.

<sup>132</sup> Since the Smith Act of 1926, the Commission enforced low rail rates for agricultural commodities, subsidized - in theory - by high rates on high value commodities. Commission policy also made it extremely difficult, and, hence, extremely rare, for a rail carrier to abandon low density branch lines, no matter how much money it was losing on the service. See Robert G. Harris, "Economic Analysis of Light Density Rail Lines," The Logistics and Transportation Review, 16(1), Winter 1980.

<sup>133</sup> Most importantly, the regulatory reforms of 1980 effectively deregulated rail rates wherever the railroad does not have "market dominance." Having finally been freed from onerous regulations, rail carriers have won back a substantial share of the traffic that they never should have lost to motor carriers in the first place, had regulation allowed fair competition. Today, the fastest growing class of rail service is intermodal -- trailers and containers moving on the line-haul portion by rail, which local pickup and delivery by truck. The shift to intermodal has dramatically reduced transportation costs to shippers, and also reduced energy consumption and highway congestion. See Mitchell E. MacDonald, "Rails Climb Back into the Ring," TRAFFIC MANAGEMENT, December 1993, p. 43.

<sup>134</sup> See Clifford Winston, Thomas M. Corsi, Curtis M. Grimm, and Carol A. Evans, The Economic Effects of Surface Freight Deregulation Brookings, Washington, D.C., 1990. These authors have conducted the most comprehensive study of the effects of both rail and truck deregulation, employing a counterfactual methodology. According to this source, the railroads reaped annual profit gains of \$2.9 billion dollars per year (1988 dollars) from deregulation, with cost savings of over \$3 billion dollars due to deregulation (pp. 15-41). According to the

customers are delighted with their newfound freedom to bargain, negotiate and contract for services, and with the significant and continuing improvements in rail service quality.<sup>135</sup>

The parallels between the regulation of railroads and local exchange carriers provide some important lessons for telecommunications policies and price cap reforms. First, the myth of monopoly pervaded the rail industry long after the demise of their monopoly power, just as it apparently is in the case of local exchange carriers. Second, the competitors of railroads played a major role in sustaining regulatory policies long after they had become counter-productive because those policies were a crucial source of competitive advantage for motor carriers, just as LEC competitors now seek to retain policies that inhibit LECs from meeting them fairly in the marketplace. Third, the structure of rail rates, incorporating rate averaging, fully distributed costs and cross-subsidies, was not sustainable in a competitive environment, just as the current structure of telephone prices are not. Fourth, while regulators based their policies on intramodal competition, the most powerful market forces were intermodal competition, just as it is likely to be in telecommunications, as telcos, cable operators, cellular carriers, satellite systems and other modes of communications compete to meet customers needs.

The vital lesson from the surface freight experience is that the more competition develops, the more important it is that regulations enable incumbents and entrants to compete effectively. The worst possible results are caused by regulations that give artificial advantages to some firms over others. In surface freight transportation, those regulatory advantages were heavily biased in favor of motor carriers. Market forces will feed off those artificial advantages: it did not matter that the cost

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Interstate Commerce Commission, ROE for Class I railroads in 1993 was 9.38%. See "Class I Railroad Financial Data," ICC Office of Economic and Environmental Analysis, May 1994.

<sup>135</sup>See Curtis M. Grimm and Ken G. Smith "The Impact of Rail Regulatory Reform on Rates, Service Quality, and Management Performance: A Shipper Perspective," LOGISTICS AND TRANSPORTATION REVIEW vol. 22, No. 1, 1986, pp. 57-68. Shippers rated rail rates and service quality in terms of speed of service, reliability, loss and damage and car supply significantly higher in the Post-Staggers period as compared to Pre-Staggers. Also, according to the Winston, et al study cited above, p. 28, shippers have received economic benefits from rail deregulation of more than \$6 billion dollars annually (1988 dollars), driven by improvement in service quality.

of rail service for a given shipper was lower than the cost of truck service, if the rail carrier must charge a higher price. It did not matter to a shipper that rail was a more efficient means of transport than truck if the rail carrier was prevented from realizing those potential efficiencies. The regulatory reforms of 1980 have restored competition balance between rail and motor carriers. Not surprisingly, both industries are more efficient, offer lower prices and better service, and are financially healthy.

### **3. Conclusion**

While it is true that the markets for local exchange services are not yet fully competitive, both actual and potential competition has increased dramatically. The Commission should recognize that once its rules take effect, the flood gates will be opened. Competition in local exchange services will not develop ever so slowly as it did in CPE and long distance services. Major competitors — several much larger than Pacific Bell — stand at “the water’s edge.” These entrants are already experienced and highly skilled in competing for the high usage customers who generate most of the profits in telecommunications services. Indeed, those high usage customers already are the customers of key entrants: AT&T, MCI and Sprint already know who the most profitable customers are. These large, resourceful, capable competitors neither require nor deserve preferential treatment from this Commission. Yet the interim and proposed initial rules put forward by this Commission do just that: give preferential treatment to entrants into local exchange services and unfairly disadvantage Pacific Bell.

Given the prospects — indeed, the inevitability — of escalating competition in telecommunications services, the Commission should modify its competition policies so they reflect the vigorous competition that lies ahead, not the market conditions of the past. Increasing competition also means that the Commission has an interest in ensuring that Pacific Bell has a fair opportunity to compete in the fastest growing, most profitable market segments. If Pacific continues to be handicapped in competing for the most profitable market segments, it will be less able to provide low-cost, high-quality service to the other market segments and will have lessened financial incentives to

invest in the telecommunications infrastructure of California. Only by modifying its proposed rules will the Commission give Pacific a chance to compete on even terms and the opportunity to earn a fair return on its investments.

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**HAAS SCHOOL OF BUSINESS, UNIVERSITY OF CALIFORNIA, Berkeley, 1977 - present.**  
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**Industry Expert Panel, Center for Telecommunications Management, University of Southern California**  
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### **TEACHING**

***Graduate Courses:* Business and Public Policy (MBA Core Course), Competitive Strategies & Public Policies in Telecommunications, Microeconomic Analysis for Managerial Decisions, Industry Analysis and Competitive Strategy, Doctoral Research in Business & Public Policy, Antitrust Law (School of Law, with L. Sullivan), Antitrust Economics (Department of Economics).**

***Undergraduate Courses:* Social and Political Environment of Business (Core Course), Economics of Regulated Industries, The Corporation and the Global Economy.**

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**PUBLICATIONS**

"Competition and Public Policies in Telecommunications: A Survey of U.S. Developments," presented to Conference on Privatization and Deregulation in the US, UK and Japan, Economic Research Institute of the Economic Planning Agency of Japan, Tokyo, 1995; forthcoming in *Conference Proceedings*.

"Competition and Unbundling in Local Telecommunications: Implications for Antitrust Policy," with Gregory L. Rosston and David J. Teece, presented to Telecommunications Policy Research Conference, Solomons, Maryland, October 1994; forthcoming in *Conference Proceedings*, EAL Press.

"State Regulatory Policies and the Telecommunications/Information Infrastructure," presented to Workshop of the National Research Council, Washington D.C., October 1993; *The Changing Nature of Telecommunications/Information Infrastructure*, National Academy Press, 1995.

"Access and Competition Policy in the Deregulated Rail Freight Industry, with Comparisons to Competitive Access Issues in Telecommunications," with Curtis M. Grimm, presented to Columbia Institute for Telecommunications and Informatics, New York, November 1993; forthcoming in *Conference Proceedings*, Oxford University Press.

"R&D Expenditures by the Bell Operating Companies: A Comparative Assessment," invited paper, Twenty-Third Annual Conference, Michigan State University Institute of Public Utilities, Williamsburg, Virginia, December 9, 1991; *MSU Public Utility Conference Proceedings*, 1993.

"Strategic Uses of Regulation: The Case of Line-of-Business Restrictions in Communications," with Robert A. Blau, presented to Academy of Management, Miami, FL, August 14, 1991; *Research in Corporate Social Performance and Policy*, James E. Post (ed.), JAI Press, 1992.

"Structural Adjustment Through Industry Deregulation: The U.S. Experience in Telecommunications and Transportation," invited paper, Pacific Economic Cooperation Conference on Structural Adjustment, Kyoto, Japan, October 11, 1990; published in *PECC Conference Proceedings*, 1991.

"Gaining Competitive Advantage through Strategic Public Policies: The Case of Japanese Telecommunications," invited lecture, National Economists Club, Washington, D.C., June 1988; published in *Economics and the Public Interest*, Richard T. Gill (ed.); Mayfield Publishing: Mountain View, CA, 1991.

"The Political Economy of Regulation: Analysis of Market Failures and Regulatory Responses," with James A. Carman, *Scaling the Corporate Wall: Readings in Social Issues of the Nineties*, S. Prakash Sethi, Paul Steidlmeier and Cecilia M. Falbe (eds.); Prentice-Hall: Englewood Cliffs, 1991.

"Telecommunications Services as a Strategic Industry: Implications for United States Policy," *Competition and the Regulation of Utilities*, Michael A. Crew (ed.), Kluwer Academic Publishers: Boston, 1990.

"Telecommunications as a Strategic Industry: Is There a Threat?" *Powernomics: Economics and Strategy After the Cold War*, Clyde V. Prestowitz, Jr., Ronald Morse and Alan Tonelson (eds.), University Press of America, 11. Reprinted from *Vital Speeches of the Day* LV(12), April 1989. Invited lecture, New York University Symposium on Telecommunications and Economic Development, December 1988.

"New Plans for Joint Ventures," with David C. Mowery, *The American Enterprise*, Sept/Oct 1990.

"Strategies for Innovation: An Overview," with David C. Mowery, *California Management Review* 32(3), Spring 1990, Co-Editor of Special Issue, "Strategies for Innovation."

"The Implications of Divestiture and Regulatory Policies for Research, Development and Innovation in the U.S. Telecommunications Industry," presented to Telecommunications Policy Research Conference, September 1988; *Telecommunications Policy*, April 1990.

"Telecommunications Policies in Japan: Lessons for the U.S.," presented to Advanced Workshop in Regulation and Public Utility Economics, Monterey, CA, July 1988; presented to Telecommunications Policy Research Conference, October 1988; *California Management Review* 31(3), Spring 1989.

"California Telecommunications Policy for the Twenty-First Century," *Report to the California Economic Development Corporation*, Sacramento, June 1988.

"A Qualitative Choice Analysis of Rail Routings: Implications for Vertical Foreclosure and Competition Policy," with Curtis A. Grimm, *The Logistics & Transportation Review*, March 1988.

"Horizontal Merger Policy: Promoting Competition and American Competitiveness," with Lawrence A. Sullivan, *Antitrust Bulletin*, January 1987.

"The Political Economy of Regulation," with James M. Carman, *Business & Society*, S.P. Sethi and C. Falbe (ed.), Lexington Books: Lexington, 1987.

"Public Regulation of Market Activity: Regulatory Failures," with James M. Carman, *Journal of Macromarketing*, Spring 1986.

"The Effects of Railroad Mergers on Industry Productivity and Performance," with Curtis M. Grimm, invited paper to Transportation Research Board, National Academy of Engineering, January 1986; *Transportation Research Record* 1029, 1986.

"Revitalization of the U.S. Freight Industry: An Organizational Perspective," with Curtis M. Grimm, *International Railway Economics*, K. Button & D. Pitfield (eds.); Croom: London, 1985.

"The Values of Economic Theory in Management Education," *The American Economic Association Papers & Proceedings* 74(2), May 1984.

"Public Regulation of Market Activity: Regulatory Responses," with James M. Carman, *Journal of Macromarketing*, Spring 1984.

"Antitrust Market Definition: An Integrated Approach," with Thomas M. Jorde, *California Law Review* 72(1), January 1984. Reprinted in *Corporate Counsel's Annual*, Matthew Bender, 1985. Reprinted in *Antitrust Anthology*, edited by A. I. Gavil, Anderson Publishing, 1995.

"Structural Economics of the U.S. Rail Freight Industry: Concepts, Evidence and Merger Policy Implications," with Curtis M. Grimm, *Transportation Research* 17A(4), July 1983.

"Vertical Foreclosure in the Rail Freight Industry: Economic Analysis and Public Policy Prescriptions," with Curtis M. Grimm, *ICC Practitioners' Journal*, July 1983.



"Market Definition in the Merger Guidelines: Implications for Antitrust Enforcement," with Thomas M. Jorde, *California Law Review* 71(3), March 1983. Reprinted in *Antitrust Policy in Transition: The Convergence in Law and Economics*. Fox and Halverson (eds.), American Bar Association, 1984.

"Public Regulation of Market Activity: Institutional Typologies of Market Failures," with James M. Carman, *Journal of Macromarketing*, Spring 1983.

"Potential Benefits of Rail Mergers: An Econometric Analysis of Network Effects on Service Quality," with Clifford Winston, *Review of Economics and Statistics* 65(1), February 1983.

"Regulation: A Long Term Perspective," *Business Environment/Public Policy: The Field and Its Future*, Edwin M. Epstein and Lee E. Preston (eds.), St. Louis, 1982.

"The Financial Performance and Prospects of Railroads in the South and Southwest," with Curtis M. Grimm, *Texas Business Review*, November/December 1982.

"More on Passing On: A Reply to Cooter and to Viton and Winston," with Lawrence A. Sullivan, *Pennsylvania Law Review* 129:6, June 1981.

*Rationalizing the Rail Freight System: Costs and Benefits of Branch Line Abandonments*, U.S. Department of Transportation, Washington, D.C., 1981.

"Determinants of Railroad Profitability: An Econometric Study," with Theodore E. Keeler, *Economic Regulation: Essays in Honor of James R. Nelson*, William G. Shepherd and Kenneth D. Boyer (eds.), Michigan State University Press, 1981.

"Passing on the Monopoly Overcharge: A Response to Landes and Posner," with Lawrence A. Sullivan, *Pennsylvania Law Review* 128(5), May 1980.

"Suppliers of Last Resort: Economics of Self-Supply in Common Carrier Industries," with Robert A. Meyer, *Quarterly Review of Economics and Business* 19(4), Winter 1980.

"Economic Analysis of Light Density Rail Lines," *The Logistics and Transportation Review* 16(1), Winter 1980.

"Passing on the Monopoly Overcharge: A Comprehensive Policy Analysis," with Lawrence A. Sullivan, *Pennsylvania Law Review* 128(2), December 1979.

"Rationalizing the Physical Structure of the U.S. Rail Freight Industry," *National Railroad Policy*, Joint Economic Committee, U.S. Congress, Washington, D.C., Government Printing Office, 1979.

"Simple Analytics of Rail Costs and Disinvestment Criteria," *Transportation Research Record* 687, 1978.

"Economics of Traffic Density in the Rail Freight Industry," *Bell Journal of Economics* 8(2), Autumn 1977.